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Award Number: W81XWH-11-1-0408

TITLE: Can Post mTBI Neurological Soft Signs Predict Postconcussive and PTSD Symptoms? A Pilot Study

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REPORT DATE: June 2012

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command  
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;  
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REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
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1. REPORT DATE 1 Jun 2012		2. REPORT TYPE Annual		3. DATES COVERED 20 May 2011 - 19 May 2012	
4. TITLE AND SUBTITLE Can Post mTBI Neurological Soft Signs Predict Postconcussive and PTSD Symptoms? A Pilot Study				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER W81XWH-11-1-0408	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Roger K. Pitman, M.D.  E-Mail: roger_pitman@hms.harvard.edu				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) The Massachusetts General Hospital Boston, MA 02114-2621				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Medical Research and Materiel Command Fort Detrick, Maryland 21702-5012				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Approved for Public Release; Distribution Unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT  Neurological soft signs (NSS) are subtle indicators of brain dysfunction. NSS have been found to be elevated in a variety of mental disorders, including post-traumatic stress disorder (PTSD), but they have scarcely been studied in TBI. The present study in progress is measuring NSS in the acute aftermath of a mTBI and evaluating their ability to predict subsequent postconcussive symptoms. To date we have screened 55 subjects via the Massachusetts General Hospital Emergency Department leading to 10 viable subjects that have been enrolled, one of whom was subsequently excluded after a positive urine screen. Six of 9 enrolled subjects have successfully completed the full three-month protocol. Their video-recorded data has been encrypted and is awaiting analysis by our off site consultant, Dr. Gurvits, the originator of the NSS battery in current use. We are actively screening subjects at the Emergency Department at the approximate rate of 3 per two weeks and are optimistic about reaching our target enrollment of 20-24 subject in the next 4 months. No preliminary data analyses have been performed.					
15. SUBJECT TERMS <b>PTSD; Postconcussive Syndrome; Neurological Soft Signs.</b>					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT  UU	18. NUMBER OF PAGES  5	19a. NAME OF RESPONSIBLE PERSON <b>USAMRMC</b>
a. REPORT <b>U</b>	b. ABSTRACT <b>U</b>	c. THIS PAGE <b>U</b>			19b. TELEPHONE NUMBER (include area code)

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## 1. INTRODUCTION

Neurological soft signs (NSS) are subtle indicators of brain dysfunction. NSS have been found to be elevated in a variety of mental disorders, including post-traumatic stress disorder (PTSD), but they have scarcely been studied in TBI. The present study in progress is measuring NSS in the acute aftermath of a mTBI and evaluating the ability of NSS to predict subsequent postconcussive symptoms.

## 2. BODY

Human subjects approvals were obtained from the Partners Health Care System and the Spaulding Rehabilitation Hospital Institutional Review Boards (IRBs) and the Department of Defense IRB. The performance and recording of the neurological soft signs (NSS) examination was rehearsed, and all necessary questionnaires and instruments were collected. Methods of encryption and safe transport of the video-recorded data to off-site consultant Dr. Gurvits, the originator of the NSS battery in current use, were developed and rehearsed. Recruitment strategies were developed and implemented in the Emergency Department at the Massachusetts General Hospital (MGH ED). Subject screening and enrollment began in September of the 01 year (month 4). To date, 55 subjects have been screened via the MGH ED leading to 10 viable subjects that have been enrolled, one of whom was subsequently excluded after a positive urine screen. Six of 9 enrolled subjects have successfully completed all three study visits (96-hour post-mTBI, 1-month post-mTBI, and 3-month post-mTBI) including neuropsychological testing and questionnaires. Their video-recorded data have been encrypted and are awaiting analysis by Dr. Gurvits. We are actively screening approximately 7 subjects each month at the ED and remain optimistic about reaching our target enrollment of 20 subjects in the next 4 months. No preliminary data analyses have been performed.

## 3. KEY RESEARCH ACCOMPLISHMENTS

- Progress in studying NSS as a subtle indicator of brain dysfunction (study underway; no preliminary analyses)

## 4. REPORTABLE OUTCOMES

None.

## 5. CONCLUSION

To date, there are no reportable results to be summarized. The study is still underway, and no preliminary data analyses have been completed.

## 6. REFERENCES

None.

## 7. APPENDICES

None.